

Recommended Management Practices

Following best management practices for a mixed field habitat is crucial to maintaining populations of American Kestrels and other grassland species.

- Mowing late in the season⁴
 - Limits nesting disturbance
 - Keeps back woody invasives
 - Allows for open hunting grounds
- Maintaining field edges
 - Discourages woody growth into the field
- Allowing for dispersed tree growth
 - Provides hunting perches
 - Enables the use of artificial perches

On agricultural lands there is no real necessity for specific management practices, since Kestrels don't require any specific grass type, length, etc. Furthermore, management doesn't directly impact nestling survival rates, because Kestrels are cavity nesters who settle along the sides of fields. But it should be noted that nests have lower rates of success when exposed to disturbances such as loud roads or noisy equipment. Poor nest placement may therefore actually reduce Kestrel populations by leading them into poor habitat, so proper site selection is crucial when placing nesting boxes.



Photo: Luke Beeson

Site Identification and Selection

With habitat requirements in mind, the best potential sites for managing land to maximize Kestrel nesting would be KLT properties with field habitats, including active agricultural lands. These properties were found through a GIS analysis. Basic observational data from eBird.org was used to identify which of the properties that included priority habitat were within the approximately 4 km² home range of any recorded sighting. Personal sightings and KLT member anecdotes of nesting birds were also considered when identifying priority parcels.

It is important to note that there may be potential sample bias present; the more popular birding destinations are likely to have more sightings. This is a rather basic analysis, but it does allow for a considerably more focused study and management approach.

This analysis identified KLT's Vassalboro Wildlife Habitat and Surry Hill as priority properties that include field habitats. For properties featuring active agricultural lands, Seward-Mills, Samuel-Hutchinson Homestead, Curtis Homestead, Webber-Rogers Farmstead, and Small-Burnham were identified as priorities.

A Note on Ecology and Terminology

American Kestrels are a member of the Falcon family. These species are evolutionarily distinct from the Hawks, which are distinguished as Buteos and Accipiters, Eagles, Kites, Harriers, and Ospreys. They are all considered Raptors, but are quite different in habitat, appearance, and behavior. In Maine there are only three types of Falcons, the Peregrine, the Merlin, and the American Kestrel (which is the smallest)⁸. The Gyrfalcon is also a rare recorded visitor in the winter. This raptor family is quite agile in the air. The birds feast on a host of prey depending on the species in question.

Grassland Species Protected Through Management for American Kestrels

By using American Kestrels as an umbrella species for conservation, a variety of other species are protected that exist in one of the most threatened North American ecosystems. Below are selected Maine species of importance and interest that would benefit from these management plans.

Birds

- Grasshopper Sparrow (*Ammodramus savannarum*)
- Short-eared Owl (*Asio flammeus*)
- American Pipit (*Anthus rubescens*)
- Upland Sandpiper (*Bartramia longicauda*)
- Bobolink (*Dolichonyx oryzivorus*)

Plants

- Common Milkweed (*Asclepias syriaca* L.)
- Lowbush blueberry (*Vaccinium angustifolium*)
- Sweetfern (*Comptonia peregrine*)

Insects

- Monarch Butterfly (*Danaus plexippus*)
- Katydid (*Tettigoniidae* spp.)
- Dragonflies and Damselflies (*Odonata* spp.)

Reptiles

- Northern Brown Snake (*Storeria dekayi*)

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A Single-Species Approach to Field Management and Associated Species



Photo: Becky Matshuma

An American Kestrel Case Study

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Why Focus on American Kestrel Populations?

American Kestrels are small, colorful, charismatic falcons whose visibility throughout rural, human-altered landscapes makes them exceptional umbrella species. The umbrella species approach to conservation relies on the theory that focusing work on one species' habitat requirements produces benefits for a number of other less readily visible species.

Grasslands in North America, the primary habitat of nesting Kestrels, have experienced about a 60% decline since European colonization. The plants, animals, and insects that inhabit them have faced similar declines.¹ Kestrel populations are facing an additional threat—an increase in the use of pesticides on farmland.² Encouraging nesting on KLT-protected field habitats through the placement of nest boxes can bolster declining populations of American Kestrels. Using nest boxes and best management practices for preserving these field habitats will encourage long-term nesting and ecosystem biodiversity.

While the use of nest boxes on agricultural land doesn't have anything to do with Kestrels being used as an umbrella species, it does provide crucial habitat for the declining population with secondary benefits for humans. It has been found that American Kestrels can act as very effective tools for pest control. They significantly reduce the number of grasshoppers, rodents, and pest birds and are especially effective in orchards. Usage in blueberry patches is also being studied.³ Whether in natural or human-altered landscapes, Kestrel nesting has wide-reaching ecological benefits.



Photo: Ryan Hohbert

Habitat Requirements

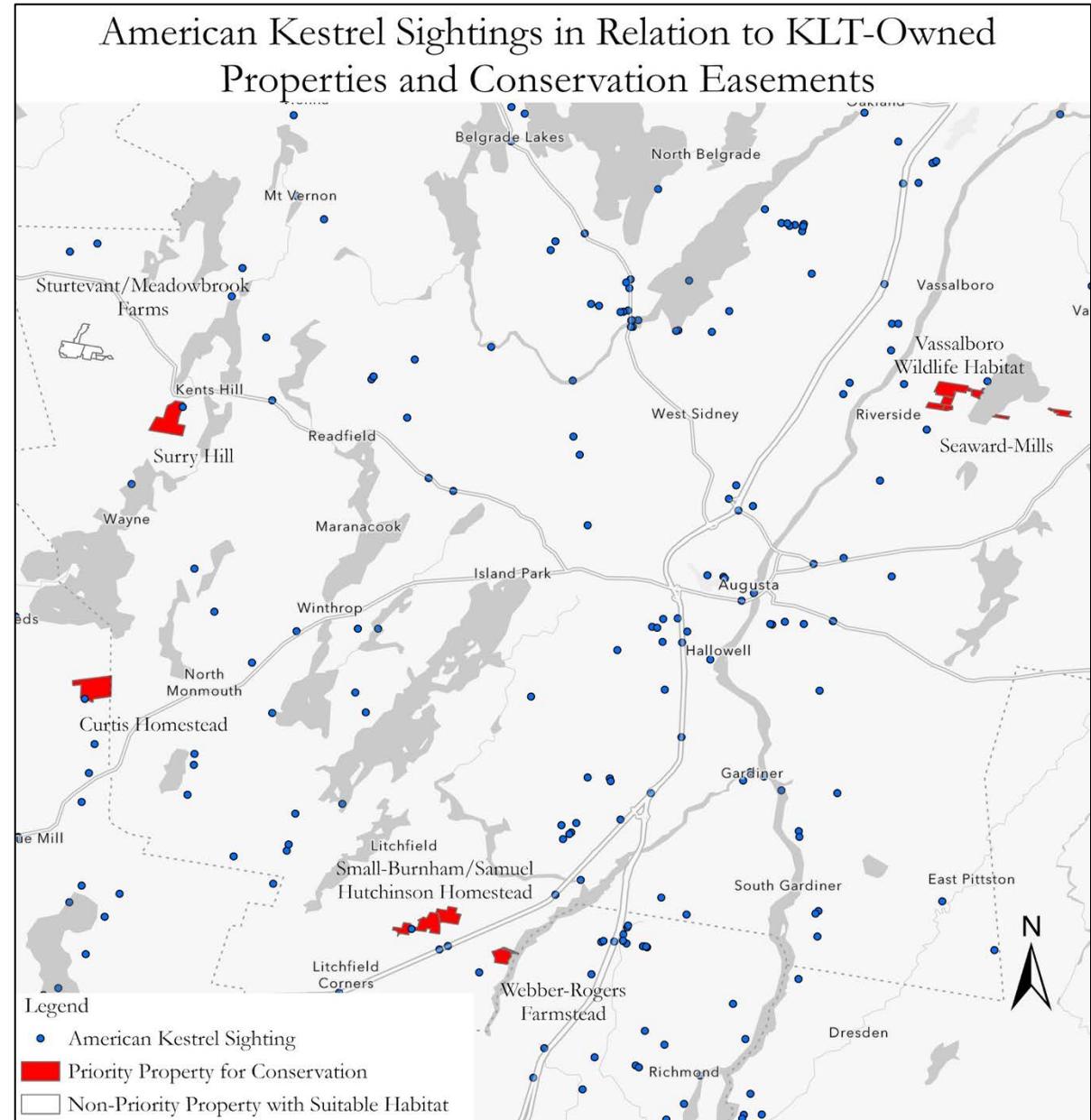
American Kestrels begin pairing up with mates as early as late March and are known to defend a breeding territory of up to 250 acres and a home range of about 4 km².^{4,5} Their home range is quite a bit larger than their defended territory, because the area they use for hunting may overlap with the territory of other birds.

American Kestrels' breeding territory has specific requirements for successful nesting and fledging. They prefer a hunting ground of open grassland with some trees spaced throughout to act as perches during a hunt.⁵ Our smallest falcons are not very particular about the actual type of habitat they nest in; it may be pastureland, cropland, or a natural grassland or prairie.⁶ As secondary cavity nesters, American Kestrels will use dead standing trees, woodpecker cavities, or holes in man-made structures.⁵ They're quick to nest in man-made boxes, since many of their natural nesting opportunities (typically in dead standing wood) have been removed.⁶

Given the value of man-made nest boxes, two were constructed to be placed on KLT properties: Surry Hill in Fayette, which features a field from a previously logged area, and Seward Mills in Vassalboro, which includes active agricultural fields. These boxes were constructed and installed based on instructions from the American Kestrel Partnership.



Photo: Luke Beason



1. Wilsey et al. (2019) "North American Grasslands and Birds Report" *National Audubon Society*
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5. "Managing Habitat for American Kestrels" (2013) *Penn State Extension*
6. Instructional page on Kestrel nest boxes from The Peregrine Fund
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8. "Raptor Types" HawkWatch International